

# SCIENCE & EDUCATION Impact

Benefits From the USDA/Land-Grant Partnership

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## The Universe and Waistlines Are Expanding

So get rid of fatty foods and exercise!

*If you want proof of an expanding universe, look no further than the size of our clothes! About 40 percent of the U.S. population is overweight, an 8 percent increase over the last decade. This is occurring despite Americans' professed interest in exercise and low-fat diets.*

*Appearances aside, proper nutrition influences our health throughout life. Coronary heart disease is the number one cause of death, obesity is linked to myriad health problems, and improper nutrition during the adolescent years and thereafter can lead to hip fractures in old age. U.S. Department of Agriculture (USDA)/Land-Grant university researchers are addressing a variety of nutrition concerns at both ends of the lifespan.*

### Payoff

- **If you can't quit, supplement.** Smoking and chewing tobacco, among other things, rob the body of antioxidants believed to protect against cancer and heart disease. **Nebraska** researchers found that tobacco users who can't kick the habit should eat at least nine servings of fruits and vegetables daily. The scientists recommend that users continue this diet for a year or two after kicking the habit to help reduce the effects of tobacco. **Nevada**, which has the highest percentage of American smokers, also found that supplementing smokers' diets with antioxidants such as vitamins C, E, and B-6 can reduce the damaging effects of tobacco smoke.
- **Focus on folate.** The vitamin folate is critical to the health of a fetus, especially in the early stages of development when some women might not yet realize they are pregnant. Research at **Florida** is being used by the National Academy of Sciences to increase the Recommended Daily Allowance for folate to 400 micrograms per day. This should have a significant economic impact on Florida orange growers, since orange juice is a naturally high source of folate.

RESEARCH,  
EDUCATION, AND  
EXTENSION  
AT WORK

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- **I saw the light.** Food scientists at **Minnesota** have developed a more economical way to identify possible food contamination by using bioluminescence (“sort of like a black light”) to spot organic matter on food preparation surfaces. The method will not only reduce the chances of food contamination but also will reduce production costs by helping food processors identify contamination more quickly and accurately—saving time, chemicals, and water.
- **Cruciferous cancer crusaders.** Broccoli has been recognized as an anticarcinogen because it contains compounds called glucosinolates. However, **Illinois** researchers have found that not all varieties of broccoli contain the same amounts of this substance. Brigadier, Atlantic, Majestic, and Wintergreen broccoli contain far higher levels of glucosinolates than other varieties. The next challenge is to find out how glucosinolates affect the flavor of the vegetable.
- **Selenium in the millennium.** Of the 40 nutrients recognized as essential for human nutrition, selenium was the last to be identified. Researchers at **Cornell** have found that selenium supplementation alone can reduce the risk of cancer, and that meats, fish, and cereals are significant natural sources of the nutrient.
- **Baby Boomers trying to stay hip.** As many as 50,000 people a year die from complications related to hip fractures. The chances of suffering a fracture increase steadily every year past age 50. As the 78 million Baby Boomers in the United States start reaching this age milestone, the potential economic and social costs could be staggering. National health care data show that the costs associated with hip fractures in the United States now are about \$10 billion per year. This figure is expected to double in the next 30 years. In an **Oregon State** program, 71 percent of the participants started increasing their dietary calcium intake, and 40 percent started taking calcium supplements.
- **No bamboozle.** About 52 million Americans have cholesterol counts that exceed recommended levels. **Purdue** researchers have found that bamboo shoots lower serum cholesterol levels in experimental animals by 23 percent. The vegetable is a common ingredient in Asian cooking.
- **Canned cancer fighters.** Cervical and prostate cancer are on the rise as our population ages. Research at **Ohio State** found that these cancers could be prevented or reduced by eating more canned, rather than fresh, vegetables such as carrots, spinach, and tomatoes. Apparently, changes take place in the canning process that make it easier for the body to absorb the protective carotenoids in these foods.



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Cooperative State Research, Education, and Extension Service

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